

VERSION OF AMENDMENTS SHOWING MARKINGS

In the Claims

1. (Currently Amended) In combination A three part rotateable coupling connector comprising:

an alignment mounting sleeve;
a first optical coupler mounted to the alignment sleeve, the first optical coupler having a first optical fiber; and a second optical fiber, the second optical fiber rotatably mounted with respect to the first optical fiber with an end of the first optical fiber positionable proximate an end of the second optical fiber to permit transfer of an optical signal between the first optical fiber and the second optical fiber while permitting rotation thereof; and

a second optical coupler mounted in the alignment sleeve, the second optical coupler having a third optical fiber and a fourth optical fiber, the fourth optical fiber rotatably mounted with respect to the third optical fiber with an end of the third optical fiber positionable proximate an end of the fourth optical fiber to permit transfer of an optical signal between the third optical fiber and the fourth optical fiber while permitting rotation thereof.

2. (Currently Amended) The combination three part rotateable coupling connector of claim 1 wherein an optical conducting substance having an index of refraction matching an index of refraction of the first optical fiber and the second optical fiber is located proximate the end of the first optical fiber and the end of the second optical fiber.

3. (Canceled)

4. (Canceled)

5. (Currently Amended) The ~~combination~~ three part rotateable coupling connector of claim 1 including an alignment guide located on the first optical coupler.

6. (Currently Amended) The ~~combination~~ three part rotateable coupling connector of claim 1 including a flanged member directly holding the first optical fiber and a rotateable member comprising a further flanged member directly holding the second optical fiber.

7. (Currently Amended) The ~~combination~~ three part rotateable coupling connector of claim 6 wherein a U-shaped member holds the flanged member and the further flanged member in rotational engagement with each other.

8. (Currently Amended) The ~~combination~~ three part rotateable coupling connector of claim 1 wherein at least one of the optical fibers includes an angle cut face.

9. (Currently Amended) The ~~combination~~ three part rotateable coupling connector of claim 1 wherein the end of the first optical fiber and the end of the second optical fiber form a butt connection.

10. (Currently Amended) The combination three part rotateable coupling connector of claim 1 wherein the second optical fiber includes an angle cut face.

11. (Currently Amended) An apparatus for optical coupling and optical decoupling comprising:

a first optical fiber having an angle cut terminus;

a rotational joint located on an end of the first optical fiber;

a second optical fiber having an angle cut terminus with the angle cut terminus of the first optical fiber and the angle cut of second optical fiber positionable in optically transmittable condition with each other to minimize back reflections;

a third optical fiber forming the rotational joint with the end of the first optical fiber ;

a fourth optical fiber in optical communication with the second optical fiber and an alignment sleeve for holding the angle cut terminus of the first optical fiber and the angle cut terminus of the second optical fiber in rotational alignment with respect to each other.

12. (Original) The apparatus of claim 11 with the rotational joint having a member with an alignment guide thereon.

13. (Currently Amended) The apparatus of claim 11 wherein the end of the first optical fiber includes a butt connectable ~~end in the rotational joint on the first optical fiber.~~

14. (Previously presented) The apparatus of claim 13 wherein an optically conducting substance having an index of refraction matching an index of refraction of the first optical fiber proximate the butt connectable end in the rotational joint.

15. (Currently Amended) An apparatus for optical coupling and decoupling comprising:

a first optical lead having a butt connectable end;
a first member holding the first optical lead;
a ~~second- third~~ optical lead having a butt connectable end;
a second member holding the butt connectable end of the ~~second~~ third optical lead in rotational relationship with respect to the butt connectable end of the first optical lead; the ~~second~~ first optical lead having an angle cut end face to allow passage of an optical signal through the angle cut end face;
a second optical lead having a butt connectable end;
a third member holding the second optical lead;
a fourth optical lead having a butt connectable end;
a fourth member holding the butt connectable end of the fourth optical lead in rotational relationship with respect to the butt connectable end of the second optical lead;

the second optical lead having an angle cut end face to allow passage of an optical signal through the angle cut end face; and

a transparent substance extending between the butt connectable end of the first optical lead and the butt connectable end of the second optical lead with the transparent substance having an index of refraction substantially equal to an index of refraction of the first optical lead and the second optical lead to thereby inhibit loss of an optical signal therebetween while permitting rotation thereof.

16. (Currently Amended) A method of twist free optical coupling comprising:

forming a rotational butt coupled joint in ~~an~~ between a third optical lead and a first optical lead having a terminus;

forming a coupling angle cut face on the terminus of the first optical lead;

forming a mating coupling angle cut face on the terminus of ~~another~~ a second optical lead

forming a rotational butt coupled joint between the second optical lead and a fourth optical lead; and

rotationally aligning the coupling angle cut face on the terminus of the optical lead with the mating coupling angle cut face to thereby transmit an optical signal therebetween while minimizing back reflection and twisting of the optical lead.

17. (Original) The method of claim 16 including the step of placing an optically conducting substance having an index of refraction matching an index of refraction of the optical leads in the butt coupled joint.

18. (Original) The method of claim 16 including the step of using an alignment sleeve to rotationally align the coupling angle cut face and the mating coupling angle cut face.

19. (Original) The method of claim 18 including the step of using an alignment guide in cooperation with the alignment sleeve to align the coupling angle cut face and the mating coupling angle cut face.

20. (Previously presented) The method of claim 19 including the step of placing a rotational joint in another optical lead.